



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,244	11/17/2003	Rakesh Vig	VTI-114.8B(CIP)	4986
47670 7590 02/02/2009 KELLEY DRYE & WARREN LLP 400 ATLANTIC STREET, 13TH FLOOR STAMFORD, CT 06901				
EXAMINER				
ANGEBRANDT, MARTIN J				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
02/02/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/715,244

Applicant(s)

VIG ET AL.

Examiner

Martin J. Angebrannt

Art Unit

1795

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

1. The response of the applicant have been read and given careful consideration. Responses to the arguments of the applicant are presented after the first rejection to which they are directed.

Rejections of the previous office action, not repeated below are withdrawn based upon the arguments and amendment to the claims.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4-14 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karasawa et al. JP 55-079441, in view of Taylor, "Chromatic separation and isolation of metachromatic thiazine dyes", J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960).

Karasawa et al. JP 55-079441 in example 3 uses methylene blue in PVA together with an electron donative amine (triethanolamine). The use of polymeric amines shown on page 3 as electron donative agents, particularly formulae VII and VIII. These are used for recording optical information and are described as photochromic.

Taylor, "Chromatic separation and isolation of metachromatic thiazine dyes", J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960) teaches tetrapropyl, diethyl/dimethyl, tetraethyl in table I on page 256 and includes their absorption maxima. The breadth of the absorption of these dyes is shown in figure 7, which evidences the spectra being more than 150 nm wide and centered about 610-650 nm.

It would have been obvious to use other alkyl groups, such as propyl or ethyl substituents in place of at least one of the N-methyl groups as disclosed by Taylor, "Chromatic

separation and isolation of metachromic thiazine dyes”, J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960), in place of the methyl groups of the methylene blue used in the example of Karasawa et al. JP 55-079441 with a reasonable expectation of success based upon the direction to thionine dyes within Karasawa et al. JP 55-079441. Further, it would have been obvious to one skilled in the art to modify the cited example by using other disclosed amines, including the polymeric amines disclosed on page 3, with a reasonable expectation of forming a useful optical recording medium based upon the disclosure of equivalence.

The applicant argues that the references are non-analogous. The examiner disagrees, noting that in both cases the references are concerned with the absorption of the dyes. The addition of Taylor, “Chromatic separation and isolation of metachromic thiazine dyes”, J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960) evidencing the propyl analog of methylene blue is known directs one skilled in the art to this compounds over the others embodied by formula 2 of Yamada et al. 63-187154. Removing the “transient” language does not preclude transient reactions. It broadens the claims to include transient and permanent coloration. The rejection stands.

The spectroscopic data and the similarity of the compounds leads one to make the substitution and have a reasonable expectation is success of forming a useful optical recording medium with performance similar to that of Karasawa et al. JP 55-079441. **The examiner notes that the claims rejected under this heading is not limited to the composition applied to the ROM medium.**

The analysis of the applicant fails to appreciate that the methylene blue would not be alone in solution and that the PVA, which is present in a concentration of approximately 100x

that of the thionine dye, would preclude this dimerization which is witnessed when methylene blue in water **alone**, without any other compounds. The analysis of the applicant is flawed. The arguments is also troubled by the use of PVA in the reference, based upon the addition of a polymer in claim 8 and the recitation of PVA in claim 9. This analysis would also fails to be persuasive for the embodiments where the amine is part of a polymer as illustrated on page 3 of Karasawa et al. JP 55-079441. The presence of the polymer, either PVA or a polymeric form of the amine, undercuts the argued position of the applicant that the absorption of propylene blue and methylene blue are radically different. The argued position also refers to the high concentration of the thionine dye, but this limitation is not present in the claims. The applicant argues that although the outcome of the reaction between amines, which are known reducing agents (which become oxidized themselves) and thionine dyes, such as thionine and methylene blue, The use of propyl substituents (C_3H_7), rather than hydrogen or methyl (CH_3) would change the chemistry is entirely without merit. Further there is no evidence in the record that the reaction would be materially affected by this substitution, particularly in view of the dimer argument being undercut by the fact pattern discussed above. The applicant is free to submit declaration data evidencing unobvious benefits comparing the use of methylene blue and propylene blue.

With respect to the issue of the limitation "wherein the interconversion between the two optical states is not caused by oxygen", The conversion in the Karasawa reference is a photoinduced reduction as the composition is applied, dried and exposed to light. The exposure induces the reaction between the thiazine dye and the electron donative amines in the same manner discussed in section [0039] of the prepub of the instant application. The issue of

aggregation in a system including a macromolecular binder has been addressed previously. The composition of Karasawa is not a dilute solution and the claims also lack any such requirement so the argument is not commensurate with the scope of coverage sought. **The claims recite that the composition is affixed to an optical recording medium, the claim does not recite a ROM optical recording medium.** The examiner has read this to embrace the composition being the recording layer of the optical recording medium. The examiner's position on the "transient" reactions is that they would embrace reversible reactions, such as those exhibited by the reversible photochromic materials of Karasawa et al. JP 55-079441. The rejection stands noting that triethanolamine (triethanol amine) is recited in claim 22. As the material applied to a substrate is optically recordable, as in Karasawa et al. JP 55-079441, it is inherently an optical recording medium, but not an optical recording disk.

4. Claims 1,4-15 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. '484, in view of Karasawa et al. JP 55-079441 and Taylor, "Chromatic separation and isolation of metachromatic thiazine dyes", J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960).

Smith et al. '484 teach the use of various phenothiazines including methylene blue and toluidine blue O in the copy prevention of optical recording media. (cols. 11 and 12). The substrate is provided with reflective layer (156) and a copy protection layer (160) (9/14-44). The copy protection can use photoactive compounds (photochromic compounds) or compounds which are photosensitive in the presence of oxygen. (9/35-13/46).

It would have been obvious to modify the media of Smith et al. '484 by using photochromic compositions, such as those taught by Karasawa et al. JP 55-079441 in place of

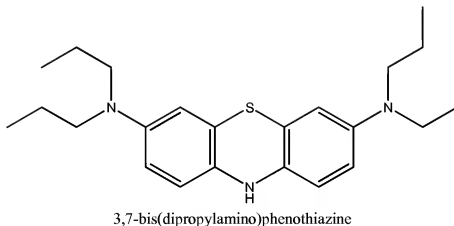
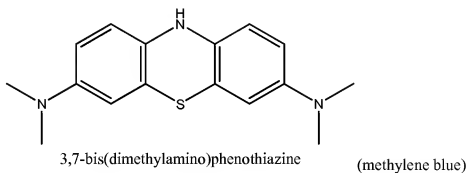
those specifically disclosed and to modify the methylene blue phenothiazine dye by using other alkyl groups, such as ethyl or propyl moieties disclosed by Taylor, "Chromatic separation and isolation of metachromic thiazine dyes", J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960) with a reasonable expectation of success in the colored form of the methylene blue propyl analogue blocking the laser light based upon the teachings of Smith et al. '484 that the colored form of methylene blue can block the laser light at an appropriate wavelength and the spectral data in Taylor, "Chromatic separation and isolation of metachromic thiazine dyes", J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960).

The applicant asserts that the limited use of the instant application is different in mechanism from the prior art. This is incorrect as both rely upon the coloration of a dye to preclude accessing the recording medium from that side. The instant claims do not preclude the presence of oxygen to ensure the coloration of the thiazine dye.

The applicant implies that the rejection under this heading is applied to the same claims as above. There are clear differences in the scope and the listing of claims reflects that. The examiner notes that the rejection under this heading does not address the presence of an electron transfer agent. The question is one of equivalence of the dyes, spectroscopically which is addressed by table 1 of Taylor and discussed above. The applicant could provide some data evidencing unexpected results when propylene blue is used in place of methylene blue, but that evidence is not yet in the record. The rejection stands for the reasons above, noting that the claims do not require an aqueous coating.

The examiner has added Karasawa et al. JP 55-079441 to this rejection on the basis that it is congruent with the photochromic materials described in column 9 of Smith et al and uses a

coloring material known from Smith et al. at column 11 as useful for blocking light when colored. The resulting combination uses a photoinduced reaction, not oxidation to cause the color change. The applicant's arguments of propylene blue (the inventive compound) and methylene blue being sufficiently different that the PHOSITA would not be drawn from one to the other within the variety of phenothiazine is without merit based upon the similarity in structure (propyl vs methyl) as seen below.



{ aka [7-(dipropylamino)phenothiazin-3-ylidene]dipropylamine }

Further, the claims also embrace the case where only one of the methyl groups in the methylene blue is replaced by another alkyl moiety, in which case the difference between

the molecules would only be CH_2 . The applicant is invited to show commensurate with the scope of coverage sought the benefits and/or unobvious results obtained when these compounds are used, rather than methylene blue. The examiner is not relying upon the "oxidizing reactive compound" portion, but the photochromic embodiments of Smith et al., so the arguments are moot.

5. Claims 1,4-15 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. '484 and Selinfreund et al. WO 02/03386, in view of Karasawa et al. JP 55-079441 and Taylor, "Chromatic separation and isolation of metachromatic thiazine dyes", J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960).

Selinfreund et al. WO 02/03386 teaches with respect to figure 8, the optical recording medium where the light sensitive materials which affects authentication being provided over the entire medium, , on one surface of the medium or at predetermined areas. (page 25-26). An embodiment where the security dye was coated on a CD is disclosed. (29/24-26) Examples describes a medium provided with authentication software. (pages 32-34). The other examples are similar. The use of methylene blue with DVD media is disclosed. in table 1 on page 21. Figure 1 shows the media written and read from the same side. Figure 4 shows the substrate with the light sensitive layer (400) disposed therein. The pits and lands are coated with a reflective layer (240) and a protective layer (235). (13/1+, 22/29-23/12). The light sensitive (400) may be placed at any location on or in the medium where it affects the laser (22/25-28). The light sensitive material may be dispersed in a polymer.

It would have been obvious to one skilled in the art to art to modify the embodiment of figure 8 of Selinfreund et al. WO 02/03386 by placing the reactive layer adjacent the pits and

reflective layer as taught by Smith et al. '484 and using photochromic compositions, such as those taught by Karasawa et al. JP 55-079441 in place of those specifically disclosed and to modify the methylene blue phenothiazine dye by using other alkyl groups, such as ethyl or propyl moieties disclosed by Taylor, "Chromatic separation and isolation of metachromic thiazine dyes", J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960) with a reasonable expectation of success in the colored form of the methylene blue propyl analogue blocking the laser light based upon the teachings of Smith et al. '484 and Selinfreund et al. WO 02/03386 that the colored form of methylene blue can block the laser light at an appropriate wavelength and the spectral data in Taylor, "Chromatic separation and isolation of metachromic thiazine dyes", J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960).

The basis for the rejection has changed, including the mode of causing the color change as discussed above, so the arguments of the applicant are not applicable. The examiner relies upon the response above to address the arguments.

6. Claims 1,4-15 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. '484 and Selinfreund et al. '631, in view of Karasawa et al. JP 55-079441 and Taylor, "Chromatic separation and isolation of metachromic thiazine dyes", J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960).

Selinfreund et al. '631 teaches in claims 36-52, the optical recording medium where the light sensitive materials which affects authentication being provided over the entire medium which is then coated with a reflective layer. Section [0053] describes a medium provided with authentication software. The use of methylene blue with DVD media is disclosed in table 1 on

page 7. Figure 1 shows the media written and read from the same side. The use of a polymeric coating of the color changing materials is disclosed at [0060].

It would have been obvious to one skilled in the art to art to modify the embodiment of claims 36-52 of Selinfreund et al. '631 by placing the reactive layer adjacent the pits and reflective layer as taught by Smith et al. '484 and using photochromic compositions, such as those taught by Karasawa et al. JP 55-079441 in place of those specifically disclosed and to modify the methylene blue phenothiazine dye by using other alkyl groups, such as ethyl or propyl moieties disclosed by Taylor, "Chromatic separation and isolation of metachromic thiazine dyes", J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960) with a reasonable expectation of success in the colored form of the methylene blue propyl analogue blocking the laser light based upon the teachings of Smith et al. '484 and Selinfreund et al. '631 that the colored form of methylene blue can block the laser light at an appropriate wavelength and the spectral data in Taylor, "Chromatic separation and isolation of metachromic thiazine dyes", J. Histochemistry and Cytochemistry., Vol. 8 pp. 248-257 (1960).

The basis for the rejection has changed, including the mode of causing the color change as discussed above, so the arguments of the applicant are not applicable. . The examiner relies upon the response above to address the arguments.

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1 and 4-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of **US Patent 6952392**, in view of Karasawa et al. JP 55-079441 and Smith et al. '484.

It would have been obvious to ones skilled in the art to modify the embodiments of claims 1-17 by adding amines as taught by Karasawa et al. JP 55-079441 to render the light blocking composition photochromic with a reasonable expectation of success based upon the teachings of equivalence of these two modes by Smith et al. '484 and to use the propylene blue compounds based upon the direction in claim 8 to the substituents being propyl or hexyl.

The applicant asks that the ODP rejection be held in abeyance. They are maintained.

9. Claims 1 and 14-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17-29 of copending Application No. 11/113516 (US 20050186382), in view of Karasawa et al. JP 55-079441 Smith et al. '484.

It would have been obvious to ones skilled in the art to modify the embodiments of claims 17-29 by adding amines as taught by Karasawa et al. JP 55-079441 to render the light blocking composition photochromic with a reasonable expectation of success based upon the teachings of equivalence of these two modes by Smith et al. '484 and to use the propylene blue compounds based upon the direction in claim 26 to the optical state change material recited.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebrannt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Martin J Angebranndt/
Primary Examiner, Art Unit 1795

Martin J Angebranndt
Primary Examiner
Art Unit 1795

01/27/2009